

CLAIMS

The invention claimed is:

1. A bearing device having a shaft, comprising:

two rolling bearings mounted on said shaft, each of said rolling bearings further comprising an outer ring, having an outer ring groove, and an inner ring,

wherein said outer ring groove is centered at a position distanced by half of a width of the inner ring from an outer edge of the outer ring, wherein the width of said inner ring is smaller than a width of said outer ring, and wherein the difference between the width of the outer ring and the width of the inner ring is double a difference in width capable of eliminating rattling of said rolling bearings when preload is applied.

2. The bearing device according to claim 1, wherein said inner ring further comprises an inner ring groove.

3. The bearing device according to claim 2 further comprising a plurality of rolling elements disposed between said outer ring groove and said inner ring groove of each said rolling bearing.